Remarks

Reconsideration of this Application is respectfully requested. Claims 13, 14, 19, 20, 26, and 27 are pending in the application, with claims 13, 19, 20, and 26 being the independent claims. Claim 20 has been withdrawn from consideration.

Based on the following remarks, Applicants respectfully request that the Examiner reconsider all outstanding objections and rejections and that they be withdrawn.

Rejections under 35 U.S.C. § 102

Claims 13, 14, 19, 26, and 27 were rejected under 35 U.S.C. §102(e) as being allegedly anticipated by Eng, U.S. Patent No. 6,370,153 (Eng). Applicants respectfully traverse this rejection.

Eng does not teach or suggest each and every feature of independent claim 13. Claim 13 recites:

> A method of transmission in a contention-based access channel by a wireless transceiver, comprising:
>
> a) transmitting a burst in said channel;
>
> b) detecting whether said burst has collided with another burst in said channel;
>
> and, if a collision is detected at said detecting step, waiting for a period determined according to a repeat parameter before repeating steps a) and b), wherein said repeat parameter is received by said transceiver and wherein said repeat parameter indicates a range and includes an increment by which said range is increased after each repetition of steps a) and b).

As recited in independent claim 13, the repeat parameter "indicates a range and includes an increment by which said range is increased after each repetition of steps a) and b) [i.e., the steps of transmitting and detecting]." This feature calls for the time

interval between successive transmissions to increase each time a collision is detected. Thus, as recited in claim 13, a transceiver that has experienced a small number of collisions attempts to retransmit more frequently than a transceiver that has experienced a large number of collisions.

In contrast, Eng describes that a subscriber station retransmits a reservation request packet "at the ***next available mini-slot*** on the upstream control channel." (Eng, col. 17, lines 50-52). Thus, Eng teaches that retransmission should occur ***as soon as possible***, regardless of the number of collisions, whereas the claimed subject-matter calls for retransmission to be progressively delayed as more collisions are detected. Thus, in Applicants' claimed invention, mobiles that are experiencing repeated collisions are automatically spread over an increasingly broader range of contention-based access capacity to increase the chance of a burst getting through, while mobiles that have experienced only one collision are not affected. (Specification, p. 2, lines 18-25).

Furthermore, the Office Action alleges that Eng discloses at col. 17, lines 19 through 27, the claimed feature of "if a collision is detected at said detecting step, waiting for a period according to a repeat parameter before repeating steps a) and b) [i.e., the steps of transmitting and detecting]." (Office Action, p. 2). Applicants respectfully disagree with this understanding. Claim 13 requires that the "waiting for a period" occurs "***if a collision is detected.***" In contrast, in the passage cited from Eng, the waiting occurs only if a collision is not detected. (Eng, col. 17, lines 19-27; FIG. 13).

Accordingly, Eng does not teach or suggest, at least the feature of, "if a collision is detected at said detecting step, waiting for a period determined according to a repeat parameter before repeating steps a) and b), wherein said repeat parameter is received by said transceiver and wherein said repeat parameter indicates a range and includes an increment by which said range is increased after each repetition of steps a) and b)," as recited in independent claim 13.

Eng also does not teach or suggest each and every feature of independent claim 19. Eng discloses a cable communication system in which a headend communicates with a plurality of subscriber stations via a single downstream (i.e., forward) channel and two upstream (i.e., return) channels. (Eng, col. 11, lines 11-17, and lines 52-60). The headend transmits packets of data to all subscriber stations using the downstream channel (known as the Downstream Control and Payload Channel, DCPC) and subscriber stations determine whether to accept or discard the packets by comparing each packet's destination address to its own address. (Eng, col. 4, lines 9-27 which is also applicable to the DCPC as indicated at col. 11, lines 46-48).

Thus, the arrangement described in Eng does not require a signal to allocate the DCPC to particular subscriber stations. Instead, all subscriber stations listen to the DCPC ***at all times*** and accept or disregard packets based on the packets' destination addresses. Accordingly, Eng does not teach or suggest at least the feature of "transmitting to each of said transceivers a forward frequency channel allocation of one or more forward frequency channels which that transceiver is to receive," as recited in independent claim 19.

The Office Action alleges that Eng, at col. 9, lines 1 through 5, discloses the claimed feature of "transmitting to each of said transceivers a ***forward*** frequency channel allocation signal indicating an allocation of one or more forward frequency channels which that transceiver is to receive," recited in independent claim 19. (Office Action, p. 3). Applicants respectfully disagree with this understanding. This passage in Eng relates to the allocation of an upstream (i.e., ***reverse***) channel, as is clear from col. 9, lines 3 to 4, which refers to "indications of assigned slots in the ***upstream*** payload channel."

Furthermore, Eng discloses an arrangement having only two return channels: an Upstream Control Channel (UCC) and an Upstream Payload Channel (UPC). (Eng, col. 11, lines 15-17). The UCC is a contention-based channel that is used by subscriber stations to request time slots in which to transmit data in the contention-free UPC (Eng, col. 12, lines 3-13; col 8, lines 60-61). The UCC and UPC each have different purposes. Furthermore, a single UCC channel and a single UPC channel are used by ***all*** subscriber stations. Hence, the arrangement disclosed by Eng does not preferentially select either the UPC or the UCC for allocation to a particular subscriber station, based upon a stored set of frequency channels. Thus, Eng does not teach or suggest "for each forward frequency channel, a set of preferred return frequency channels is stored, such that for each of said transceivers to which a specified one of said forward frequency channels is allocated, the allocated one or more return frequency channels is preferentially selected from said corresponding set of preferred return frequency channels," as recited in independent claim 19.

The differences between the subject-matter of claim 19 and the arrangement disclosed in Eng give rise to a more efficient communication system that minimizes the number of different return schedules which need to be transmitted (Specification, p. 19, lines 6-17 and p. 3, lines 14-21). The invention, as recited in claim 19, allocates a number of forward frequency channels amongst a number of transceivers, and then assigns capacity on a particular return channel that is associated with the forward channel that a particular transceiver is tuned to receive (Specification, p. 19, lines 15-17). This arrangement thereby allows return schedules to be transmitted to only a subset of the total number of transceivers, and avoids the unnecessary transmission of return schedules to other transceivers.

Eng teaches away from the subject matter of claim 19. As described above, Eng instead discloses that upstream channel allocation information should be transmitted to ***all*** subscriber stations using a single Downstream Control and Payload Channel. (Eng, col. 4, lines 9-27, and the description of a DCPC packet at Eng, col. 15, lines 1-4, and 30-40). Thus, the invention, as recited in claim 19, provides more efficient utilization of bandwidth than the arrangement disclosed by Eng.

Eng also does not teach or suggest each and every feature of independent claim 26. Eng discloses an arrangement by which a subscriber station calculates how many time slots would be required to transmit the payload data that is queued for transmission to the headend. (Eng, col. 16, lines 27-31). The subscriber station then requests the headend to allocate the required number of time slots. (Eng, col. 16, lines 51-58). In response, the headend allocates time slots to the subscriber station. (Eng,

col. 17, line 65 - col. 18, line 6). The subscriber station transmits its queued payload data in the allocated slots. (Eng, col. 18, lines 8-15).

In the arrangement disclosed by Eng, the headend does not monitor payload data received from the subscriber stations to predict how much channel capacity each subscriber station is likely to require in the future. Instead, the headend merely allocates the number of time slots that each subscriber requests. Thus, the headend in Eng is merely responsive to request packets in which the subscriber stations request channel capacity, but is incapable of proactively determining how much capacity the subscriber stations are likely to require based upon the content of payload data.

Accordingly, Eng does not teach or suggest at least the features of "detecting the content of said monitored," "predicting, on the basis of said monitoring step, a demand for capacity ..." and "... an allocation in said channel determined according to said predicted demand," as recited in independent claim 26.

An advantage of the subject matter recited in independent claim 26 is that a transceiver does not need to request additional bandwidth because the network can detect that additional bandwidth is required and allocate it in advance, thereby reducing the signaling overhead and reducing the delay before the required bandwidth becomes available. (Specification, p. 3, lines 9-13). In contrast, the arrangement of Eng requires subscriber stations to request the number of timeslots they need based upon the quantity of data that is queued for transmission.

For at least the above reasons, independent claim 13, 19, and 26 are patentable over Eng. Claim 14 depends from claim 13 and claim 27 depends from claim 26. For at least these reasons, and further in view of their own features, dependent claims 13

and 27 are patentable Eng. Reconsideration and withdrawal of the rejection are therefore respectfully requested.

Conclusion

All of the stated grounds of objection and rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider all presently outstanding objections and rejections and that they be withdrawn. Applicants believe that a full and complete reply has been made to the outstanding Office Action and, as such, the present application is in condition for allowance. If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

Prompt and favorable consideration of this Amendment and Reply is respectfully requested.

Respectfully submitted,

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